Mile High

MHTSUG maintains a sub-board on THE KINGS MARKET BBS.
(303)665-6091, 8-1-N, Accessible through PC-Pursuit.
MENU SELECTIONS TO GET TO THE SUB-BOARD ARE:
(1) CONTENTS
(2) INTERESTS & USERS GROUPS
(3) TIMEX - SINCLAIR
General messages for club members are addressed to "ALL".

MILE HIGH TSUG NEWS.

MHTSUG October 19th meeting. By Curt Carlson

The meeting took place at Platt Park, with plenty of good food, family and fun. Some discussion on computing and planning next months meeting agenda occured, but most of the time was spent eating, and enjoying the sunny but cool day. The need for Tony Tebby's QJUMP TOOLKIT II was discussed as this is the missing part of QDOS and the improved version of the original TOOLKIT. This version corrects many defects in the QL ROM. It obviously is more than a toolkit, and is actually a ROM upgrade with SUPERBASIC enhancments and features which are even improved and faster then the original version.

THE 2068 VIDEO DIGITIZER (continued from September issue) By Curt Carlson

The digitizer circuit has been around for many years even though many new software and hardware upgrades are just being introduced. I have observed that the original articles appeared in 1987 SYNC-LINK (Jan/Feb and Mar/Apr), the Toronto Timex Sinclair Users Group newsletter. I purchased just the bare board a couple of years ago and could hardly wait to get it together and try it out. It worked fine after a little adjustment with the board controls and camera settings. The circuit board is very compact and all parts are standard components available at many electronic supply stores. Part of the circuit is digital, where counting and synchronizing takes place and the rest is analog where operational amplifiers act as switches controlled by the digital signals to turn the video signal on and off. A Flip-Flop is used as a binary counter to drive three resistors to adjust the treshold of one of the Op Amps to turn on and off the video, depending upon its brightness level. These three resistors are selected to be close to the binary values of 1, 2, and 4. These resistor values are 6.8K, 15K and 33K, ideally the resistor values should be exactly one-half or

twice that of its adjacent resistor, (i.e. 7.5K, 15K and 30K), but they are close enough. When the flip-flop counts in binary it passes a voltage through each of the three resistors in every possible combination, which is a total of eight. This results in eight different voltage levels at the non inverting input at the video op amp. The original software supplied with the Digitizer has the ability to select any or all of the eight levels during each scan that is digitized. If all eight levels are selected then a video image can be digitized in eight levels of gray. The only problem is an error in placing these resistors on the board. They are indicated by the instructions to be installed in reverse order so that when in operation it adds the resistors starting from seven and goes to zero. During the eight scans it starts with the darkest levels of video and tries to add lighter levels to it. This is like trying to draw with a black marker on black paper. There are two solutions to correct this error, one is to reverse the counting direction of the flip-flop by modifiing the program, and the other is reverse the first and third resistors on the circuit board. I corrected the problem the easy way by reversing the resistors. Now I had eight levels of gray to scan automatically for a very good digital image.

When John McMichael wrote his software that improves on the texturizing of the gray patterns, he corrected the counting direction in his program. Now the resistors were reversed on my board for the new software. Here again, either the software or the hardware must be modified. I chose to modify the hardware. A simple four pole-double throw switch could be used to flip-flop the resistors for each program. I had already built a plastic case to protect and house the board and there isn't much room for a 4pdt switch. My solution finally was solved by using one Hex buffer IC, three more resistors and a double pole-double throw switch. Each binary output of the flip-flop was connected to two of the buffer inputs and the buffer outputs then were connected to two sets of the 6.8K, 15K, and 33K resistors. The 2p2t switch then selected the three resistors which would add values correctly for both the original software and the corrected software. My reason for going this route is that I hope to replace the manual switch with a circuit driven by the computer to flip the resistor values. Perhaps someone reading this may want to do some hacking and modify the software instead. I would like to hear from anyone who has solved the count problem by correcting the software. Next month I will continue with some more digitizer discussion.

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PROFILE +5 FOR THE 2068
        Thomas B. Woods has updated his PROFILE program now to PROFILE +5. All of the features of the earlier versions of PROFILE 2068 and PROFILE +3 are included. The new version allows file merge and dating files. The complete program on cassette is $29.95 plus shipping and handling from RMG ENTERPRISES. The users manual is only available from Tom Woods for $10.00